eureka

Issue 18

Spring 2013

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THE MAGAZINE FOR THE MATERIALS HANDLING PROFESSIONAL

Sparkling service

Moët et Chandon fizzes with Aprolis.

Back in black

Backhauling boosts logistics profitability.

Show me the money

Cat® dealers helping to find elusive fleet financing.

Future perfect

Is the automated warehouse the future face of logistics?

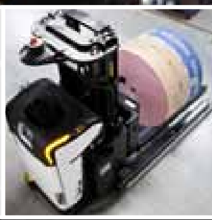

Photo ©Michel Jolyot.

eureka

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"It was Archimedes who observed that the power of levers could be used to move the entire world." This publication is named after his famous exclamation of '**eu**reka!', literally, 'I've found it.'

The magazine for the materials handling professional

Welcome to 2013's first edition of **eu**reka! How much has changed since the mellow autumn days of last year? Well, the winter has not been as severe as the last few – fingers crossed! – and while we might wish for clear evidence of an upturn in economic activity, that does not seem to have arrived just yet. The companies that are prospering seem to be those that make things happen, rather than just waiting.

Aprolis, France's Cat® lift trucks dealer has been working to help the world's best-known premium champagne brand, Moët et Chandon, to improve its internal logistics and materials handling performance. As the world-famous bubbly is kept in a network of caves and tunnels extending to 28km, and located 30 metres underground, it is not a straightforward business! Find out more about the challenges of this sensitive, enclosed environment and how Aprolis rose to them, from page 4.

Imagine that, every time you went out into your office or factory, you could see that half of your machines were running and consuming energy, but not making anything. That is the reality of vehicle utilisation in logistics; average usage levels are below 50% and more than one-quarter of all trucks make their return journey completely empty. One way of making fleets more cost effective is the efficient use of backhauling. *Gay Sutton* tells all from page 8.

Businesses are being squeezed tightly by banks and traditional sources of finance, by very onerous lending criteria, by refusals and by high interest rates. If you are in the UK or The Netherlands, at least, then help is at hand because the Cat® dealers in those countries have ideas and resources to help. See what they have been saying to *Ruari McCallion*, on page 12.

Finally, the day may come when warehouses are 'lights out' operations, with no people inside at all – just the quite hum of machinery at work. How far off is that day? Probably some time, but the choice of automation programs and equipment is getting wider by the day. See what *Gian Schiava* has found out, from page 14.

If you found these articles helpful or have experiences to share, let us know. Send your comments and ideas to us at the address below. We wish you a prosperous 2013!

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Monica Escutia
Commissioning Editor

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Don't forget to visit the **eu**reka website
www.eurekapub.eu
where you have access to the archive of useful articles and features. You can also post comments and suggestions about the magazine and future articles you'd like to see covered.

*Visit **eu**reka online!*

Events Calendar

Date, Event, Location, Website	Overview
19 - 22 March 2013 **IMHX 2013** National Exhibition Centre (NEC), Birmingham, UK. www.imhx.biz	The *International Materials Handling Exhibition (IMHX)* is jointly owned by Informa Exhibitions and the British Industrial Truck Association (BITA). Held once every three years, *IMHX* is the UK's premier intralogistics event and one of the leading storage and handling shows worldwide. Expected to feature over 400 exhibitors, *IMHX 2013* will showcase the latest products and services to optimise materials handling, storage and transportation in today's supply chain.
21 - 23 March 2013 **LOGISTICA PARMA** Fiere di Parma, Via Fortunato Rizzi, 67a I-43031 Parma, Italy. www.senaf.it	*Logistica* is an international exhibition of machinery, equipment and systems for industrial logistics. It is an excellent place where it's possible to find the whole view that the Italian market offers for logistics, transport, handling, supply chain management, lean manufacturing, automatic identification etc. *Logistica* takes place in conjunction with MECSPE an international exhibition dedicated to production technologies.
26-28 March 2013 **SITL LOGISTICS SOLUTIONS** Paris Nord Villepinte, Paris, France. www.sitl.eu	For the international and national communities of transporters of freight and logistics service providers, *SITL* offers a unique access to innovative products and services dedicated to procurement, distribution and the supply chain of tomorrow. *SITL* is THE place to get the most relevant information about the composition and evolution of markets and the development of their networks. It enables access to all the tools required to win in competitiveness and performance in both strategic and operational matters.
4 - 7 June 2013 **TRANSPORTA POZNAN** Poznan International Fair Grounds Glogowska Street 14 60734 Poznan, Poland www.transporta.mtp.pl	*Transporta* is an international trade fair for material transport and handling. The represented product spectrum includes transport vehicles, vehicle bodies, engines, transportation containers, material handling systems, loading equipment, drives, controls, conveyors, working platforms, industrial doors, storage systems, industrial robotics, logistics management and freight forwarding services. The exhibition is accompanied by a wide program of events for industry professionals such as seminars, conferences, international business meetings workshops and special presentations.

Photo ©Alain Gelberger

A service without moderation...

In the heart of its Champagne vineyard, Moët & Chandon - the flagship brand of luxury group LVMH - is using its partnership with Aprolis to refocus on its core business and improve efficiency. A bubble of tranquillity…

Now that the year-end holiday period is over, let's focus on one of France's flagship products: champagne. Still synonymous with luxury, conviviality and partying and driven by strong international growth, it is managing to resist the financial crisis rather well. Among all the winegrowers, cooperatives and hundreds of champagne houses, one of them is particularly prestigious. Founded in 1743, Moët & Chandon is undoubtedly the brand whose corks 'pop' most around the world! Its address, Avenue de Champagne in Epernay (51), is a symbol of its prestige and has played host to many crowned heads and celebrities, but a major part of the success of its bubbly nectar is based on what happens underground.

220 handling equipment devices at a depth of 30 metres

Descend into the depths and you will find an extensive network of caves in Champagne, carved out of the chalk during the 18th century. At a depth of 30 metres, corridors, galleries and cellars open out and intertwine on several levels. The silence of this 28km labyrinth of dark caves is only disturbed by guided visits on an organised circuit or by the comings and goings of some 220 materials handling machines. Around one hundred 1.6t Cat® forklifts cross paths with 75 Spijkstaal Tractors, as well as 29 vehicles used for transporting people and 15 warehouse trucks - pallet trucks and stackers. Their role is to move and transport the Moët & Chandon bottles stored here to mature for a minimum period of 15 months.

> **"Around one hundred 1.6t Cat® forklifts cross paths with 75 Spijkstaal Tractors, as well as 29 vehicles used for transporting people and 15 warehouse trucks - pallet trucks and stackers."**

All are electric - to avoid emissions, smell and vibration in this sensitive enclosed environment. The machines will soon have something else in common: long-term rental. With nearly half the fleet currently still owned, Warehouse Maintenance and Handling Depot Manager Thierry Manteau intends to optimise fleet organisation and reduce costs. How? By strengthening his partnership with Aprolis, currently responsible for the other half of the fleet which is on long-term rental. →

__1.__ 30 metres underground, a network of corridors, galleries and cellars open out and intertwine. Photo ©Andreas Achmann.
__2.__ Moët & Chandon bottles are stored here to mature for a minimum period of 15 months. Photo ©Michel Jolyot.
__3.__ Cat EP16NT electric lift trucks, chosen to avoid emissions, smell and vibration in this sensitive, enclosed environment.

→ Three resident Aprolis engineers

"Our business is to produce champagne, not to carry out handling maintenance", states Thierry Manteau. "We are not specialised to do that and so, from 2013, we want to transfer all of this business to Aprolis, in whom we have total confidence." Their know-how, as an exclusive dealer of Cat® lift trucks and as a leader in the rental market for multi-materials handling in France, is already a guarantee in itself.

> **"We are not specialised to do that (maintenance) and so, from 2013, we want to transfer all of this business to Aprolis, in whom we have total confidence."**

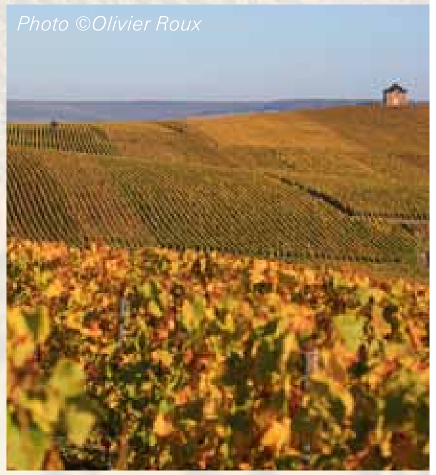
Since 1985, Moët & Chandon has wanted to include a second truck manufacturer to diversify the fleet of Fenwick trucks that it already owned. Having tested trucks from the main brands on the market, the decision was made to go for Cat® lift trucks. In early 2000, Cat® became the exclusive brand of forklift trucks used by Moët & Chandon. Then in 2007 the champagne house decided to go even further and put all its lift trucks on long-term rental. This trust, explained Aprolis account manager Pascal Demange, is due to the specific offering proposed by his company. "We can rent and maintain anything that rolls, from tractors through to warehouse trucks and cleaning machines. We are extremely versatile and our customers have a single service provider to meet all of their needs. This makes them feel comfortable." So, because it is 'impossible' for Thierry Manteau, "to contemplate service not being provided and machines immobilised", three Aprolis engineers are permanently located on-site. From their dedicated central workshop, they provide preventive and curative maintenance for the whole Epernay fleet.

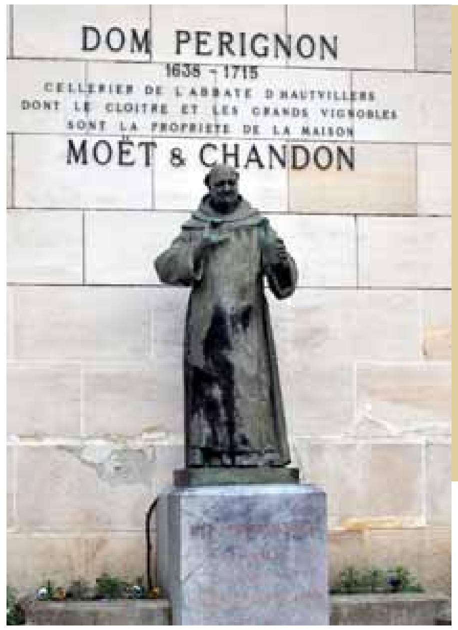
100% manual harvests

Service levels are further increased during harvests. These are always carried out manually and in accordance with tradition over a period of around three weeks between the beginning of September and the end of October. During this time the Aprolis short-term rental takes over. Forty-five gas-powered lift trucks are used in pressing centres across the whole of Champagne region to transport the grapes to the press. The 1,100 hectares of Moët & Chandon vines comprising the largest vineyard in Champagne, makes up part of this supply, the rest being bought from winegrowing partners.

Knowledge of the sector and the people who work in it enables the Aprolis team to be as in-tune as possible with its customers' needs. "They are partners both on a day-to-day basis for specific business requirements and issues, as well as in their development proposals," Thierry Manteau is pleased to report.

4. Thierry Manteau, MHCS warehouse maintenance and handling depot manager, and Pascal Demange, Aprolis salesman.
5. EP16NT Cat® lift trucks in loading room.
6. EP16NT Cat® lift trucks with bottle rack carriers, equipment specifically for transporting champagne bottles.
7. New generation EP16CNT electric truck.





Champagne is booming overseas

Although the global market for champagne recorded a decrease of 5% for the first nine months of 2012, exports are boosting sales. In 2011, nearly 330 million bottles were shipped worldwide: this represents +32% in Australia (4.9 million), +24% for Russia (1.3 million), +19% in China (1.3 million), +14.4% for the United States (19.4 million), +7% for Brazil (more than 1 million) and +6.7% in Japan (7.9 million). Source: Comité Interprofessionnel du Vin de Champagne (CIVC).

It should be noted that for Moët & Chandon, the world's leading brand in terms of sales, 2012 sales are on the increase, with two major customers - the USA and Japan - and one country that is gaining ground - China. 80% of group production is intended for the export market.

← Moët & Chandon, a shop window and benchmark for other champagne houses

Proof by way of example:

- use of high-strength and fully recyclable tyres
- delivery of the first next-generation EP16CPNT Cat® electric trucks, with a significantly longer battery life
- discussion on the use of oil for the entire fleet, etc.

It is true that the champagne house has been practising an effective environmental policy for several years. In particular, Moët was the first of the LVMH Group to implement sustainable development management and boasts ISO 22000 and 14001 certifications.

A fermenting room of more than 100,000 hectolitres has been constructed on the Mont-Aigu site right in the heart of the vineyard and it will have the benefit of an ultra-modern and innovative environmental approach while conforming to the exacting HQE (Haute Qualité Environnementale) standard. This 'first' for the commercial champagne sector allows Moët & Chandon to remain "the shop window and benchmark for other champagne houses," states Thierry Manteau, who is proud of being part of a brand that is "always being watched and often a trailblazer." ■

Article feedback is welcome: **editor@eurekapub.eu**

The art of turning

Turning up to 50,000 bottles per day by hand! Something that seems to be out of a science fiction film is nevertheless the reality for David Vincent and his two 'turner' colleagues for champagne house Moët & Chandon. When sufficiently mature, turning helps to remove the sediment that makes champagne cloudy. A traditional champagne technique, it consists of turning each bottle neck-downwards to make the sediment flow down into the neck and thus make it possible to expel the sediment entirely. For financial reasons, manual turning, still carried out for the great vintages, is increasingly being replaced by mechanical pallet turning.

← David Vincent, turner at Moët & Chandon

Reaping a return

There are many apparent barriers to backhauling, not least of which is the sticky issue of branding and working with your greatest competitor. Yet there are enormous opportunities to reduce supply chain costs and carbon emissions if these hurdles can be overcome.

Gay Sutton finds out how some of the best companies are achieving these savings and how they manage the challenges.

Official figures are often depressing. But they can point to significant opportunities for improvement. According to Mike Bernon, Chairman of the CILT Reverse Logistics Forum, the average level of vehicle utilisation across industry is still below 50% although some sectors are doing significantly better. Moreover, the UK Department of Transport indicates that an astonishing 25% of road transport operations make the return journey empty. Of those that do better, much of it is carrying waste packaging material for recycling, or empty pallets and cages that will be filled again for the next outbound journey.

This leaves a significant opportunity for backhauling - filling the vehicle with goods for the return journey, thereby cutting the unit costs of logistics and reducing carbon emissions. But what does it take to turn this theoretical opportunity into a reality? And what can we learn for companies that do it well?

"The UK Department of Transport indicates that an astonishing 25% of road transport operations make the return journey empty."

In the past, the majority of backhaul utilisation has been driven by third party logistics providers. Commissioned to move materials for a range of companies they are under pressure to reduce costs and cut carbon emissions, and have access to a wide range of routes and product types. "Very often," Bernon said, "their fleets are dedicated by contract, so a vehicles goes out laden and returns empty. However, if they are allowed to by contract, they do backhaul."

1

Read the Wikipedia article on 3PL.

Visit www.tradeteam.com.

1. A big issue faced by 3PLs is encouraging companies to agree to work with competitors to establish backhaul arrangements. Image courtesy of Tradeteam.
2. Identifying suitable logistics companies and hauliers to partner with, and managing those partnerships is the responsibility of the Tradeteam transport planners. This requires strong understanding of the flows in the marketplace. Image courtesy of Tradeteam.

3PLs leading the way

Tradeteam, part of the global logistics provider DHL, is a specialist 3PL for the drinks industry, delivering into pubs and large supermarket distribution centres, and the company has developed a strong operational framework to exploit backhaul opportunities from supermarket delivery business. "Being part of DHL we have the ability to look across the whole of DHL for suitable backhaul loads," explained Tradeteam managing director Gavin Murdoch. "So we begin by looking for reverse flows from other DHL contracts. If nothing logical matches up, we then go outside to a subcontract partner."

"Being part of DHL we have the ability to look across the whole of DHL for suitable backhaul loads."

Identifying suitable logistics companies and hauliers to partner with, and managing those partnerships is very much down to the Tradeteam transport planners. And this requires strong understanding of the flows in the marketplace. "However, a lot of work has to go into setting up this type of partnership if is to succeed," he cautioned.

Both parties have to commit to providing the work for each other and agree a mechanism to line up the dates and times of the flows in both directions. Based on this they can then underwrite the costs that are offered to both the outbound and return leg customer.

Developing a new mind set

"One of the big issues the 3PLs face, however," said Professor Richard Wilding of Cranfield, "is encouraging companies to agree to backhaul arrangements and to engage in what we call 'co-ompetition', collaborating with a competitor."

Two companies that have successfully overcome the deeply ingrained psychological hurdles of working with their competitors are Nestle and United Biscuits. The two companies initially met at an Institute of Grocery Distribution (IGD) 'speed dating' session, a workshop set up to bring companies together to investigate opportunities for sharing transport resources. Having discovered their logistics operations →

2

IGD's seven steps to successful backhaul collaboration

1. *Produce a summary of lanes and volumes.*
2. *Identify potential collaborative lanes with possible partner.*
3. *Agree rates on a lane by lane basis.*
4. *Agree on key performance indicators and a review mechanism.*
5. *Run a pilot.*
6. *Review pilot.*
7. *Roll-out.*

Tarun Patel, Director of supply chain, IGD.

Download the detailed guide at www.igd.com.

→ and processes were a good match, they came to the brave and unorthodox conclusion they should leave competitive behaviour in the supermarkets and collaborate in logistics.

"One of the big issues the 3PLs face, however, is encouraging companies to agree to backhaul arrangements and to engage in what we call 'co-opetition', collaborating with a competitor."
Professor Richard Wilding of Cranfield

Step by step they examined and broke down the barriers to working together, and in 2007 the first United Biscuits lorry transported a load of Nestle products from the Nestle York factory to its own distribution centre in Bardon. The collaboration continues to evolve and saves over 280,000 km of road travelling and around 95,000 litres of diesel a year.

Best practice from the retail trade

Another initiative that many of the big supermarket chains find works very well is to utilise the delivery fleet to collect stock from existing suppliers during the return journey to the distribution centre. They are collecting products they are equipped to carry, and the warehouses they collect from comply with their rigorous operational and health & safety standards. "The approach we took," Sainsbury's said, "was to enter partnerships with suppliers as a haulier and not the supermarket/customer." The supermarket purchasing side of the business is therefore completely separated from the haulier offering. "This makes our suppliers more comfortable with the agreement. We now quote for the business against other hauliers on a level basis."

"The approach we took," Sainsbury's said, "was to enter partnerships with suppliers as a haulier and not the supermarket/customer."

Meanwhile, European retailer Tesco has developed a sophisticated process to utilise backhaul for returned goods. "Five years ago, we had products coming back from 500 shops. Now we have returns from over 2000 shops," said national returns manager Ian Towell. Even the small Tesco Express and Metro shops provide a convenient local return route for goods purchased online. "Achieving this has presented us with quite a reverse logistical challenge."

Tesco's solution is to backhaul the returns using the existing ambient food delivery chain, and to embed all the processes into the company's IT management system to achieve an efficient and uniform response across the group, and complete traceability of products through the network. Returns are collected in-store in a secure cage. "When the cage is full it can be returned to one of our satellite depots on most returning vehicles. This might happen three times a week for a large store, or at least once a month for a small store."

When the satellite depots have collected a full load of 45 cages these are then transported to the Returns Centre at Saltley, Birmingham, keeping vehicle movements to a minimum.

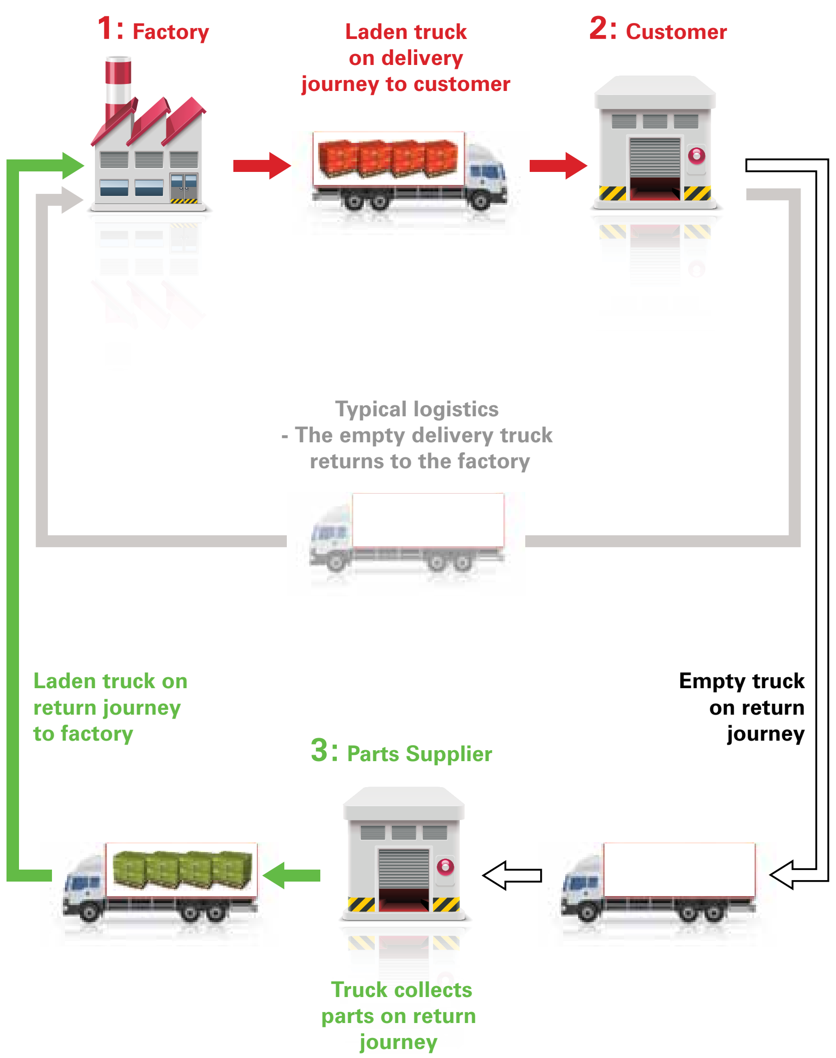
Making it work

For companies looking to better utilise their empty vehicle space, Wilding suggests taking time to build strong relationships and embedding them in systems, not on conversations. And help is out there. Industry associations like the IGD, which works very closely with its members to promote collaborative logistics, are a good source of information, guidance and support.

"IGD facilitates Efficient Consumer Response UK, a cross-industry group of supply chain professionals," said Tarun Patel, director of supply chain IGD. "As part of their sustainable distribution workgroup, they have created a guide to Transport Collaboration that includes a seven step process to help organisations utilise transport resources and is based on the best practice from household retailers and consumer brands." ■

Article feedback is welcome: **editor@eurekapub.eu**

6 ***Typical Backhauling example:***



3. The Tradeteam fleet. Image courtesy of Tradeteam.
4. Gavin Murdoch, Tradeteam Managing Director
5. For the backhauling arrangement to work, both parties have to commit to providing the work for each other and agree a mechanism to line up the dates and times of the flows in both directions. Image courtesy of Tradeteam.
6. Diagram - Filling the vehicle with goods for the return journey cuts the unit costs of logistics and reduces carbon emissions.

Climbing the money tree

The ongoing economic crisis is making it difficult for companies to secure the necessary resources to invest in their businesses. How easy is it to gain financing through a dealer in today's climate and are dealers offering any additional services to encourage customers to invest?

Ruari McCallion finds out what has been achieved.

When the phrase 'sub-prime mortgage' was first heard this side of the Atlantic, it attracted very little attention. When the whispers about banks losing trust in each others' balance sheets and ability to pay first reached audible levels, many – if not most – thought that it was just something happening on the fringe of financial activity, maybe a bit of froth that had to be blown off the top of the banking beer before getting back to the normal merry-go-round. But when Lehman Brothers, a large American bank, was allowed to fail, it became clear that things were rather serious. From crazy lending through a credit crunch to a global banking system that teetered on the edge of collapse took very little time, and the world's economies in a very short space of time went from perhaps over-exuberant activity to contraction unseen since the 1930s.

We are still living with the consequences now and are likely to continue to do so for the foreseeable future. Instead of significant growth, year after year, we have economies that are barely growing at all. In no small part, this is due to the availability of credit for business investment –or rather, the lack of it. The old saying that 'money makes the world go round' has rarely been proven to be more true. Businesses starved of financing cannot expand, take on more staff, boost stock or invest in more efficient materials handling systems.

"...the world's economies in a very short space of time went from perhaps over-exuberant activity to contraction unseen since the 1930s."

Problems with Imperfection

"Since 2008, finance houses have been looking for customers with perfect credit scores," said Impact Handling, the Cat® lift trucks dealer in the UK. "They are charging the maximum amount of money for minimal risk. They are rejecting even potential risk." It is a very trying situation but, luckily, Cat lift trucks dealers in some countries, at least, are able to help customers to find their way through the maze.

"Our industry in the UK is largely contract hire," said Impact. "The majority of deals are funded through finance houses – usually industry-specific leasing companies." So the majority of the deals are funded by the very people who are not lending. So far, so not so good. But there are so-called 'captive' finance companies around – tied to or owned by manufacturers or dealers, are there not?

"Our industry in the UK is largely contract hire - the majority of deals are funded through finance houses – usually industry-specific leasing companies."
Impact Handling

"Some companies may claim to have their own finance company but you will find, almost inevitably, that they are backed by a finance house," Impact Handling explained. This means that financing decisions are ultimately out of the dealers' hands – they are in the same situation as the overwhelming majority of others. Long standing and loyal customers are finding themselves refused the finance they need to expand, replace or even just rearrange and rejig their fleets.Impact is in a different position, however, and is willing and able to help.

Visit:
www.impact-handling.com

"We wholly own our own equipment. The trucks we put out, we own," said Impact. It is not beholden to any finance house or bank in supplying customers' fleets. "We credit check our customers, of course, but we are able to be more understanding and to respond flexibly to changing needs and demands." Impact Handling gave an example of how this works in practice.

"We wholly own our own equipment. The trucks we put out, we own."
Impact Handling

Hitting a Moving Target

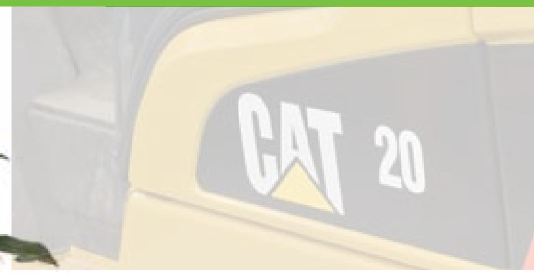
"The industry norm for contract hire fleet supply is five years. In days gone by, you would go to see the customer after four-and-a-half years and renew the fleet for the next period," he explained. "Now, customers don't know where they will be in five years." Or even less. "It's a moving target. The beauty of our contract, because we own our own trucks, is that we have the flexibility to change. We can adjust the makeup of a fleet mid-term. Operators who are financed by banks have to settle their existing arrangement and start a new one – and the problem, for the customers, is that they might not be able to get out and rearrange. "The fact that Impact is able to offer such flexibility is an advantage.

Tighter Criteria

"We have been finding customers coming to us and this is very much part of our sale pitch," Impact said. "We make a point of letting our customers know how we finance our contracts. It gives them flexibility that is not generally available." Terms and conditions are a bit tighter, which is only sensible – hardly any business has managed to avoid finding itself landed with bad debts as customers have gone out of business. Impact, like any organisation, only wants to trade with companies that are credit worthy – and if they are, then it can deliver the flexibility and service commitment they need.

In The Netherlands, Crepa is in an advantageous position.

"We are not experiencing any difficulties with sourcing finance at all," said Tom Broeder, regional manager with Crepa BV. "We are part of a larger organisation and our mother company is wealthy and financially healthy. We generally do not need a bank for financing but, if we do, we are able to arrange deals under good conditions."



Its fleet management is structured in a similar way to Impact's – essentially, Crepa continues to own the trucks and rents them under contract to the operators. It undertakes credit checks of its customers, of course, and it can afford to be selective, as demand for good quality financing deals is pretty high.

"Our analysis of customers has probably got tighter in recent years but a lot of information is old. Figures in Dun & Bradstreet, for example, are for 2011," said Broeder. "In the current situation, companies can get into trouble in just a few months, so conventional corporate intelligence resources are not up to the job." So how does Crepa avoid being caught out?

"Crepa continues to own the trucks and rents them under contract to the operators. It undertakes credit checks of its customers, of course, and it can afford to be selective, as demand for good quality financing deals is pretty high."

"You can never be 100 per cent certain," he said, "but if you see that your customer is maybe a bit weak but is related to a larger company, then more security can be asked for. Or they can sign together, the larger organisation can act as a guarantor." Crepa has made a habit of building up relationships with larger and well-established businesses, from Tata Steel through SABIC and KLM for example. As it is well-funded itself, of course it is approached by new prospective customers. In the current situation, Crepa can afford to be cautious.

Spreading Risk

"We have a healthy spread of exposure and we think before taking on new customers. We do not want to take on a lot of risk," said Broeder. And while this might be an opportunity to expand its business and encourage customers to expand their fleets, that is an opportunity Crepa is happy to forego. "In fact, we encourage our customers to use as little as possible! It sounds odd but we try to keep the focus on process and 'right-size' the fleet to our customers' needs. That is well received: they realise we are trying to save them money."

Fleet operators are facing challenging times. The best thing to do is to talk to Cat® materials handling dealers to find out how they can accommodate and meet their needs. ■

Article feedback is welcome: **Ruari@eurekapub.eu**

__1.__ Finance has become increasingly difficult to secure. Cat® dealers strive to find ways to help customers get the equipment they need.
__2.__ Impact Handling owns all trucks supplied to its customers, meaning it is not beholden to finance houses or banks. This enables Impact to offer a high level of flexibility.
__3.__ Tom Broeder, manager sales at Crepa. Crepa encourages its customers to optimise fleet sizes and so keep costs as low as possible.

Visit:
www.crepa.nl

Is the warehouse of the future fully automated?

At recent materials handling exhibitions like Logistica (Netherlands) and Manutention (France), the number of suppliers providing automated warehouse solutions has increased significantly. Will the warehouse of the future become a high tech building with hardly a human to be seen?

Gian Schiava digs into the pros and cons of warehouse automation.

Let's begin exploring this topic by examining how goods are moved around the warehouse and define what we mean by warehouse automation. When warehouse operators physically travel to where the goods are located in the warehouse, we call this 'man-to-goods'. While this can be done using advanced machines like turret trucks in combination with barcode scanning, we do not consider this to be warehouse automation. However when systems are used to bring 'goods-to-man' we cross the borderline. This is automation. There are many solutions on the market to help achieve this, like mini-load cranes, horizontal or vertical carrousels, shuttle systems, sorting systems and many more. In most cases these systems are combined with conveyors, further reducing the need for human intervention.

The second thing we need to bear in mind is that many companies don't fully automate their logistics operation. Some only automate certain warehouses or perhaps stock with high turn-over. So a mixture of a sophisticated orderpicking combined with conventional pallet racks is not unusual around Europe.

When to automate

Let us have a look, then, at the reasons a company might consider automating the warehouse.

Probably the biggest driver is the ever increasing cost of labour. Wages are spiralling downwards due to the financial crisis, but this may only be temporary. In the longer term, the population in most European countries is ageing and labour is likely to become much scarcer. On both counts, automation is a solution.

"...A mixture of a sophisticated orderpicking combined with conventional pallet racks is not unusual around Europe."

Space is another major issue. The automated warehouse does not require wide aisles to accommodate forklifts moving to store and retrieve goods. A narrow corridor is sufficient for a shuttle or crane. Moreover, shuttles and cranes work at greater heights than trucks. So by decreasing the aisle width and increasing the racking height you can pack more goods into an automated warehouse. In practice, this means the whole operation can function very efficiently in a smaller and less costly space. Or, if storage requirements are increasing then automation can make warehouse expansion or a move to larger premises unnecessary.

Next - to err is human. In a manual warehouse errors are unavoidable. Although we check accuracy with techniques such as barcode scanning or voice recognition, the human order picker can still make an error. Machines do not. They do exactly what they are told every time.

Automation therefore leads not only to fewer picking errors and greater customer satisfaction, but also to lower costs.

"- to err is human. In a manual warehouse errors are unavoidable. Although we check accuracy with techniques such as barcode scanning or voice recognition, the human order picker can still make an error. Machines do not."

The last main reason for choosing to automate is to increase productivity, particularly as customers are placing their orders later and later. While cut-off times at 14.00 hours were once considered normal, nowadays orders are still accepted at 18.00 or even 20.00 hours. And e-commerce is only enhancing this trend. The later the cut-off times, the shorter the lead time on the warehouse floor. If at a given moment only a few hours are left to pick hundreds of orderlines, some form of automation is almost inevitable.

There are many secondary and less compelling reasons for automation, such as reducing overall energy consumption. And the fact that automated systems are becoming more affordable makes them all the more attractive.

Image courtesy of Rocla Oy

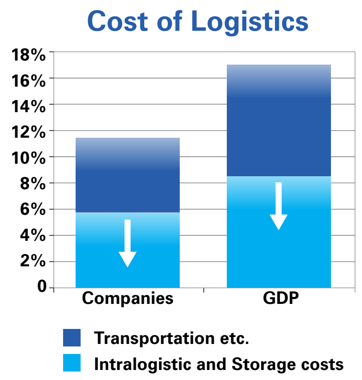
Automated Guided Vehicles

- *AGVs really work well in applications with 2 or 3 shifts, reducing the pay-back period.*
- *AGVs are reliable. They do their work. Always.*
- *Pallet traceability is a big advantage, especially for the food industry.*
- *AGVs reduce the damage to goods and buildings.*

Source: Rocla Oy

Image courtesy of Rocla Oy

Image courtesy of Rocla Oy



Source: Rocla Oy

But it's not that simple!

If the drivers for automating a warehouse are so clear, then why are there still so many conventional operations?

First of all, warehouse automation still requires serious investment with a long pay-back period. In these harsh economic times a large number of companies are simply striving to survive while loans are difficult to obtain.

In general we see pay-back periods for automated systems varying from four to five years. So if in doubt, at least do a ROI calculation before considering such an outlay.

"Warehouse automation still requires serious investment with a long pay-back period."

The second fear is that automated systems may be less flexible, adding an extra layer of constraint. Demand, for example, is difficult to predict, and you do not want to build a 10 million Euro warehouse only to discover that, because of shrinking sales, you have far greater throughput capacity than you need. Big distribution automation projects probably make most sense for companies that are either growing or can predict demand accurately.

With a manual warehouse, it is not that difficult or expensive to move racking, change warehouse flows, or introduce other changes. In a warehouse with extensive systems or kilometres of conveyors making these types of changes is often difficult and costly.

Furthermore, automation requires standardisation. For example, in an automated pallet warehouse, goods need to be stored carefully on the pallet. Boxes cannot protrude into the aisle and it's essential that goods don't fall off. Shrink-wrapping helps but adds more to the overall costs.

There is another way

The pros and cons above are not arbitrary. What may be a big problem for one company may be irrelevant to another. However, 'to automate or not' is not the only question. Logistic managers across Europe have a very demanding job, working to keep costs down while simultaneously trying to increase performance. And that isn't likely to change in the next few years.

So if making an investment is not an option, it pays to have a closer look at the warehouse and see where bottlenecks can be eliminated and productivity can be improved.

"Logistic managers across Europe have a very demanding job, working to keep costs down while simultaneously trying to increase performance."

Companies are changing all the time, so why would their warehouses stay the same year after year? Take a closer look at the pallet racks. Can you decrease aisle width and work with reach trucks in order to increase storage capacity? Are your trucks carrying goods both ways or driving without loads half of the time? Is your aisle length and direction still what it needs to be? You may be surprised at the productivity gains to be made if you approach this process thoroughly.

21st century warehouses

Today, tomorrow and even the day after, we will see warehouses of all kinds. Automated, partially automated or fully manual, they all provide challenges and opportunities for improvement. A degree of warehouse automation should never become an aim in itself. It's the goals of the company, both short and long term, that should be the beacons towards the future. ■

Article feedback is welcome: **editor@eurekapub.eu**

Importance of warehousing decisions

- *Studies show that 11.5% of company costs are related to intralogistic.*
- *17% of GDP in western countries are logistics costs.*
- *Half of this is related to storage operations, intralogistics and capital costs.*

Source: Rocla Oy

Savings to be gained

Financial benefits

- *Reduced damage to transported goods and buildings (in some sectors, such as the paper industry, up to 1-2 % of the annual production).*
- *Lower labour costs.*
- *Reduced operating and maintenance costs.*
- *Short delivery time brings quick pay back.*

Operational benefits

- *Reliable 24/7 operation.*
- *Traceable and identifiable product movements.*
- *Logistical flexibility - easy to update and modify.*
- *Optimal use of existing premises.*
- *Safety increases dramatically.*
- *Low life cycle cost.*
- *No fixed structures.*
- *Failsafe operation.*

Source: Rocla Oy

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